PAIR ANNIHILATION (OR PAIR JOINING, PER THE ULTRA-SPACE FIELD THEORY) & ITS POTENTIAL AS AN ALTERNATIVE ENERGY SOURCE

This paper describes pair annihilation and pair production with a view towards using pair annihilation as an alternative energy source. To that end, the Ultra-Space Field Theory[1] is used as a functional model.

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Excerpt from 'The Treasure Hunter', by Keith D. Foote (available at Kindle):

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"Well," Janet asked, "if they (*electrons and positrons*) don't have a true surface area, when do they actually make contact?"

"Maybe they don't," Alex said playfully, trying to maintain a light-hearted mood. "Maybe they don't annihilate one another."

"That's right," she said. "Instead, they join. And when they join, they suck in on each other, creating an ultra-subatomic, electric black hole."

"They don't annihilate." Alex stared in empty space for several seconds. "I take it those quaint little electric black holes are the source of the EM field."

"Yup! The ultra-small, steel-hard balls James Maxwell once used to try explaining transverse waves, have been replaced with ultra-subatomic energy fields," she said.

Alex knew from studies in his former life, James Maxwell had helped start the whole electromagnetic field idea. He'd provided the math for Michael Faraday's discoveries.

What was it she just said? "Ultra-small, steel-hard balls as a foundation for EM waves, replaced with ultra-subatomic energy fields?"

Ideas mixed with old and recent memories in Alex's mind. "Bloody hell! Are you telling me you've gone back to the aether theory model!"

Pair Joining (Also Known as Pair Annihilation)

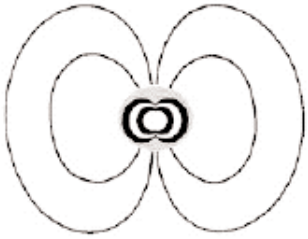
The following description is based the Ultra-Space Field Theory model. From fairly stationary positions, and when in range, an electron and a positron will accelerate towards one another. The two energy fields join, creating a disturbance in the EM field equal to two or more quanta. Quanta represent units of kinetic energy moving through the electromagnetic field, often in the form of a wave, and were discovered by Maxwell Planck. (In the Standard Model, quanta are described as particles called photons.)

A common orbital version of the joining process results in a field event called positronium. This phenomenon exists when the positron and the electron sustain a decaying orbit around each other, similar to two stars orbiting one another, or the way a large planet will shift a star's center of gravity, causing it to oscillate noticeably as the planet orbits. The distance between the electron and the positron as they orbit one another influences the length of time before they join, and the amount of quantum energy released. A greater distance results in a longer amount of time and can produce three, or more, quanta. Velocity at the time of joining is a key factor in the EM frequencies produced.

Pair Joining

Positron Electron

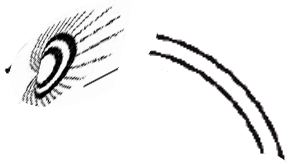
Pair Joining



Thermon

Positronium

Electron



Positron

Environmental conditions are also a factor in the creation of light from a positron and an electron. **The introduction of a magnetic field can speed up the merging process of positronium, resulting in more energy being released**. Should an electron and positron join while in a solid or a liquid, the local electric and magnetic fields can alter the strength and direction of the EM waves/quanta.

Pair Joining As An Alternative Energy Source

As should be obvious, the joining of an electron and positron, or pair annihilation, does not produce very much energy. Two to twenty quanta (or photons), by themselves, are not going to accomplish very much. Huge numbers of electrons and positrons would be necessary. If a cheap and easy source of positrons existed, no problem. But, there isn't one, at least not yet.

There is a seemingly endless supply of loose and free electrons, but a serious shortage of positrons. A curious detail about the universe, which fails to get much attention, is the missing positrons. During pair separation/production electrons and positrons are released in equal numbers. Where are the missing positrons? (The Ultra-Space Field Theory predicts the missing positrons are locked into the center of the proton, a much more complex organization of field energies.)

As a general rule, positrons will have to be created and stored. There might be some massive positron cloud hiding in the depths of space, surrounded by a protective magnetic field, but we don't have access to it. There are some regions in our magnetosphere, layers in the magnetic field surrounding Terra (called Van Allen belts), which contain and protect positrons. Collecting them would require a magnetic containment field for purposes of storage and a field of electrons to attract them. However, this seems an unlikely source in terms of cost effectiveness. Pair separation seems the most probable source of positrons.

Pair Separation (Formerly Known as Pair Production)

This model recognizes the pair separation of an electron and a positron as the result of a thermon caught between the collision of EM waves and a stabilizing energy field (typically an electric or magnetic field), which is nearly stationary, or moving toward the oncoming EM wave. **High frequency EM waves (typically gamma rays) produce vibrational patterns within the thermons, causing separation in the same way glass shatters from high pitched sounds**.

The thermon is continuously compressed and released by the high-frequency rhythm of the gamma rays. Intensity plays a role, in that more quanta are moving through a given space as intensity increases. The compression process continues, with the connecting electric field lines stretching and weakening the bonds of the electron and positron. Upon separation, each takes opposing trajectories, often traveling with similar velocities. Interfering magnetic and electric fields can alter direction and speed.

Electrons and positrons are defined as two different types of subatomic electric fields. This model does not project a magnetic field and 'spin' onto these two subfields. **The USF Theory associates electrons with an eastern trajectory and positrons with a western trajectory, per numerous experiments**.[2]

This phenomenon is known as the East-West Geomagnetic effect. Electrons and positrons are repelled by the magnetic north and south poles of a planet, and if moving toward its equator, will scatter horizontally, with electrons moving "preferentially" to the east and positrons preferentially to the west. This effect interested the AMS (Alpha Magnetic Spectrometer) group[3], led by M. Honda, M. A. Huang, and K. Kasahara, using computer models.

The electron exhibits a dual nature, repelling other electrons and simultaneously attracting positrons. Positrons display the reversed attraction, and a repulsion of other positrons.

Of recently documented experiments, one of the most important was performed at the Stanford Linear Accelerator Center and reported in the Sept. 1, 1997 issue of Physical Review Letters. Electrons were accelerated to near the speed of light and aimed at a laser beam with a 527 nm wavelength (a frequency falling in the green range of visible light).

The addition of considerable velocity flattened and condensed the forward regions of the electrons' field, compressing and intensifying their field strength as they reached the laser beam. The interaction of high-speed electrons with EM waves resulted in the splitting of thermons, producing positrons and electrons. **The experiment is significant because it shows the pair separation process can take place using EM wave frequencies much lower than gamma rays**. In this new model, the oncoming EM waves are 'relatively' blue-shifted by the high-speed electrons. A field of moving electrons pushes of layer of thermons immediately

ahead of it. In this experiment the thermons in front of the moving electrons are the source of pair separation.

Recommendations

Given the small amount of energy produced during the joining process of an electron and a positron, huge amounts would be necessary to provide a useful alternative energy source. Solar, or some other free source of energy, would be necessary to make this a viable enterprise. This is not undoable. (Additionally, I would be really interested in seeing what happens when a huge number of positrons and electrons contract in on one another. Artificial gravity? A sudden vaccum? Plus, EM waves are being produced all over the place and there's all kinds of thermal activity. I wouldn't want to be caught standing inside the experiment.)

It should also be noted the USFT model predicts thermons are larger and spread more thinly in the depths of space than they are near an intense gravity source. It is predicted that thermons contract and compress with proximity to a gravity field. This results in a slowing light as the medium becomes denser. For example, light would travel more slowly on Jupiter than on Terra, and more slowly on Terra than in the depths of space. Pair splitting could probably be initiated more efficiently on a space station than it could be done on Terra, and may be a more appropriate energy resource for space ships.

Gamma rays are the traditional end result of pair joining. While interesting, gamma rays, are difficult to contain and work with.

Producing infrared EM waves from the joining process seems a more functional path in making use of the energy generated. We're familiar with transforming heat into other forms of energy, and infrared would act to heat whatever matter is supplied for purposes of heat absoption and extraction. Additionally, there would be the thermal turmoil caused by the joining process as an energy source. Heat production seems the most functional way to go.

Magnetic fields have been shown to speed up the joining process. I would like to theorize that, used appropriately, magnetic and/or electric fields could be used to slow the joining process, producing the desired infrared EM waves.

References

[1] ‘Ultra-Space Field Theory’, K. Foote, Cosmos Books, Ann Arbor, 2005. (Available at Google Books.)

[2]Trend Report, #3 http//www.magnet.oma.be/trend4/public/ trend3/test06.gif, ‘On the Magnetic Reflection of Cosmic Rays’ by B. Rossi, Physical Review, #36, p606, 1930, and ‘A Positively charged component of Cosmic Rays’ by A.H. Compton, Physical Review, #43, p835, 1937.

[3]Presented at the 27th International Cosmic Ray Conference, Hamburg, 2001. http//ikfia.ysn.ru/icrc27/papers/ici6506 p.pdf.